UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,531	01/29/2004	Jianwen Ni	005242.00103	2230

22907 7590 09/08/2005

BANNER & WITCOFF
1001 G STREET N W
SUITE 1100
WASHINGTON, DC 20001

EXAMINER	
HAMPTON HIGHTOWER, PATRICIA	
ART UNIT	**PAPER NUMBER**
1711	

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/766,531	NI ET AL.	
	Examiner	Art Unit	
	Patricia Hightower	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 May 2005*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment

In view of the applicants' amendment/response filed May 23, 2005 the rejection of the claims under 35 USC 112, second paragraph has been withdrawn; further, the rejections of the claims under 35 USC 103(a) as being unpatentable over Israel et al (USP 4,898,776) in view of Eek-Vancells (EP 715 935) or Luetgert et al (USP 6,610,164) and Israel in view of Eek-Vancells or Luetgert in view of West et al (US 2003/0040562); all said rejections have been withdrawn. However, the claims are subject to a new ground of rejection under 35 USC 103(a) as being unpatentable over Baxter (USP 4,968,771 of record & newly cited) in view of Dupre et al (USP 6,114,491 newly cited).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-58 are newly rejected under 35 U.S.C. 103(a) as being unpatentable over Baxter (USP 4,968,771 of record & newly cited) in view of Dupre et al (USP 6,114,491 newly cited).

Baxter (USP 4,968,771) discloses wood adhesives modified with surface active agents for wood gluing useful in the manufacture of composite wood products by

applying the adhesive composition to the wood and curing the adhesive; wherein the adhesive comprises a ***formaldehyde-condensation resin (phenolic novolac and resole resins, urea-formaldehyde resins, melamine-formaldehyde resins, resorcinol-formaldehyde resins or mixtures of these resins***) and *a minor amount of surface active agent (surfactant/wetting agent)* ((e.g., ***cetyl alcohol,aromatic amines, oleic acid, acetylated sucrose diester, ethylene glycol distearate, acetylated monoglycerides, sorbitan trioleate and glycol dioleate).*** See abstract; col. 3, lines 3-7, 10-28, 30-38, 39-56,60-68; col. 4, lines 1-42, Table 1; Table 2; col. 5, lines 7-68; col. 6, lines 1-6, Examples 1-2; col. 7, lines 11-22; claims 1-5.

Baxter teaches the surface active agents is used in an amount sufficient to enhance bond strength after curing, are combined with aldehyde condensation resins, and optionally other modifiers (aromatic amines), to make up the adhesives. ***The surface active agent should preferably make up from 0.01% -0.2% and especially from 0.02% - 0.08% of the final adhesive weight. The resultant adhesives are used by directly substituting them for the adhesives routinely used to glue composite wood products in production process well-known to those skilled in the art. Co1. 5, lines 13-31,39-50,56-59,67-68; col. 6, lines 1-10.***

At col. 3, lines 39- col. 5, lines 7-50, 67-68; col. 6, lines 1-10, Baxter teaches " in gluing wood laminates or particles, it is sometimes necessary to use high moisture content veneers or furnish, but this tends to cause poor bonding due to over penetration of the adhesive. The incorporation of small amounts of certain surface tension modifiers (surfactants) decrease over penetration without causing the dryout problems

produced by most other modifiers or resin (vinyl resins) modifications. The beneficial effect of the surtace active agent is additive to that of, for instance vinyl resin, ***so that it is possible by using both modifiers to obtain greater reduction of over-penetration than that which could be achieved with either one separately. The surface active agent seems to boarden the tolerance of a formaldehyde condensation adhesive to moist veneers, whether or not other modifiers are present. It could alternatively also replace more expensive modifiers such as vinyl resin.*** The ***most preferred surface active agent is cetyl alcohol***; however, ***other compounds with related properties are within the contemplation of the invention.*** These compounds include but are not limited to the aliphatic monofunctional alcohols having between 10 to 25 carbons atoms, olefinic monohydroxy alcohols having between 10 to 25 carbon atoms, other compounds which have HLB values similar to these alcohols are also contemplated as surface active agents. ***In addition to the formaldehyde condensation resin and a minor amount of surface active compound, the adhesive compositions may include other additives of the sort used routinely in the art of wood gluing to modify adhesive properties (aromatic amines).*** In particular, ***adhesives which contain both the surface active agent and one or more of the penetration control agents listed in Table 2 will enhance the performance*** of both."

Baxter teaches at col. 4, lines 37-43, Tables 1 & 2, that in addition to formaldehyde condensation resins and a minor amount of surface active compound, the adhesive compositions contemplated may include other additives of the sort used

routinely in the art of wood-gluing to modify adhesive properties. In particular, adhesives which contain both the surface active agent and one or more of the penetration control agents listed in Table 2 (aromatic amines) will enhance the performance of both modifiers.

However, the reference differs in not teaching directly that the wood composite product comprises a decorative overlay affixed to the face layer; nor that the surfactant as instantly claimed contains a triethylamine. Although, the reference clearly teaches that aromatic amines can be used in combination with the surface active agent as instantly claimed. Thus, it is the position of the examiner that a skilled artisan in the wood composite products art would have the expectation of success that the aromatic amines as a modifier in conjunction with the surface active agent as taught by Baxter would produce the same or similar properties as instantly claimed; since the patent and the instant application are both using an amine in conjunction with a surface active agent/surfactant.

Dupre et al (USP 6,114,491 newly cited) teaches the preparation of phenol-formaldehyde and melamine-formaldehyde resin-based binders/adhesives extended with a cyclic urea-formaldehyde prepolymer and to products prepared using the binders/adhesives. ***The cyclic urea prepolymer comprising urea, formaldehyde, and ammonia or a primary amine which when added to a phenol-formaldehyde or melamine-formaldehyde based resin results in a useful binder/adhesive*** for the manufacture of articles ***including consolidated wood products such as plywood, engineered lumber, hard board, fiber board, laminates, paper saturating resins,***

overlay, and the like. See col. 1, lines 19-30,36-44, 51-54, 59-67; col. 2, lines 1-30, 46-64,65-67;col. 3, lines 15-22,32-35,36-51, 56-61; col. 4, lines 34-37,49-50,65-67; col. 5, lines 18-22,25-50,51-58, 59-67; **col. 6, lines 1-3,10-13,17-20, 25-46; col. 7, lines 30-40, 41-46; col. 8, lines 19-27,41-43;** col. 11, lines 18-26, col. 12, lines 15-31, 51-64; col. 13, lines 62-64; **especially col. 16, lines 18-25, 26-36, 37-46.**

Dupre et al'491 teaches at col. 16, lines 18-25,26-36,37-46, in overlay paper laminates, a melamine formaldehyde resin is modified with 1-25% cyclic urea prepolymer solids by cold addition or by reaction. Cured overlay paper treated with the cyclic urea modified melamine-formaldehyde resins retain water and heat resistance. Methods, techniques and equipment for preparation of decorative laminates are well known to those skilled in the art and need not be described in detail. In general, a ***generally porous substrate such as paper or a fabric web is impregnated with a solution of the modified melamine resin and dried (3-staged).*** The dried resin impregnated substrate along with other layers, is pressed usually with heat to form a laminate. A typical decorative laminate is prepared from (1) a rigid substrate, (2) a melamine resin impregnated decorative substrate and in some cases (3) a melamine resin impregnated overlay sheet. ***In such decorative laminates, the rigid substrate may consist of any suitable material,*** such as particle board, ***resin-binded wood fiberboard***, a ***plurality of phenol-formaldehyde resin-impregnated sheets,*** etc. These composites are heated under pressure to form a single component which can be incorporated into furniture, used on countertops or flooring, etc.

Dupre'491 teaches at col. 1, lines 58- col. 2, lines 1-8, that it is often desirable to scavenge the free formaldehyde prior to application; (1) to reduce the free formaldehyde emissions during the forming and curing of the insulation product, (2) to reduce the free formaldehyde prior to the addition of an acid catalyst, (3) to reduce the cost of the binder and (4) to improve the anti-punk properties of the resin. The most common scavengers are chemical species containing a primary or secondary amine functionality. Urea, ammonia, melamine and dicyandiamide are a few of the more commonly used amines.

Dupre'491 teaches the cyclic urea prepolymers may be used as modifiers of thermosetting phenol-formaldehyde and melamine-formaldehyde based resins for a variety of end uses. The use of cyclic urea prepolymers in such resin binders/adhesives provides properties superior (superior stability) to the properties of using the resin alone in many applications. Col. 5, lines 18- 50.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the teaching of Dupre'491 that it would be beneficial to provide an extender for both phenol-formaldehyde resins and melamine-formaldehyde resins in order to reduce formaldehyde emissions, phenolic emissions, improve properties of the products obtained with the resin and to reduce overall cost of the resins by the addition of a modified cyclic urea prepolymer to the resin retain water and heat resistance and further the teaching of making a decorative laminate prepared from a rigid substrate, a melaine resin impregnated decorative substrate and in some cases a melamine resin impregnated overlay sheet. That the wood adhesives modified with

surface active agents in combination with another modifier such as an aromatic amine to impart enhanced properties to the formaldehyde condensation resin as taught by Baxter in preparing composite wood products, could have been modified by the addition of a decorative overlay as taught by Dupre'491 thereby obtaining the instant invention as claimed.

Applicant's arguments with respect to claims 1-58 have been considered but are moot in view of the new ground(s) of rejection.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are cited to show the state of the art of modified phenol-formaldehyde resin, wood composites prepared therefrom, laminated wood based fibrous webs; Ishitoya, Luetgert, Elbez, Hsu, Ni and Foucht.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia Hightower whose telephone number is (571) 272-1073. The examiner can normally be reached on M-F from 9:30 A.M. - 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

P. Hampton Hightower
Primary Examiner
Art Unit 1711

P. Hightower:ph
September 03, 2005